

**CLAIMS**

**We Claim:**

1. A disposable fluid circuit kit for use in extracorporeal blood treatment systems that supply replacement fluid to a patient, comprising:

a fluid circuit having a blood portion for carrying blood, a filtrate portion connectable across a porous membrane to said blood portion, and a replacement fluid portion connectable to a supply of replacement fluid;

a sterilizing filter in said replacement fluid portion, said sterilizing filter having a pore size effective to eliminate pyrogens from a fluid passing therethrough.

2. A kit as in claim 1, wherein said replacement fluid portion includes more than one connector for connecting to multiple sources of replacement fluid simultaneously.

3. A kit as in claim 1, further comprising a cartridge configured to support said blood, filtrate, and replacement fluid portions.

4. A kit as in claim 3, wherein said replacement fluid portion includes a plurality of connectors for connecting to multiple sources of replacement fluid simultaneously.

5. A kit as in claim 4, wherein said plurality includes a plurality of bag spikes.

6. A kit as in claim 1, wherein said sterilizing filter is in an in-line configuration such that all fluid passing through said replacement fluid portion is filtered thereby.

7. A kit as in claim 1, further comprising respective pumping portions in said filtrate, blood, and replacement fluid portions each configured to engage with a respective pump actuator to move respective fluids through said each.

8. A kit as in claim 7, further comprising a supporting cartridge tray configured to align said pumping portions in respective positions to allow them to engage with respective pump actuators.

9. A disposable fluid circuit kit for use in extracorporeal blood treatment systems that supply replacement fluid to a patient, comprising:

a fluid circuit mounted in a cartridge;

said fluid circuit including a blood circuit portion connected to a filter, a replacement fluid circuit portion connected to said blood circuit portion, and a waste circuit portion connected to said filter;

a sterilizing filter in said replacement fluid portion, said sterilizing filter having a pore size effective to eliminate pyrogens from a fluid passing therethrough;

said sterilizing filter being located in an in-line configuration such that all replacement fluid passing into said blood circuit portion must pass through a membrane thereof.

10. A kit as in claim 9, further comprising:

a connector in said blood circuit portion for connecting a venous line of said blood circuit portion to a patient access;

said sterilizing filter being located between said source of replacement fluid and said blood circuit portion;

said replacement fluid circuit portion being connected to said venous line.

11. A kit as in claim 10, wherein said replacement fluid circuit portion includes more than one connector for connecting to multiple sources of replacement fluid simultaneously.

12. A kit as in claim 10, wherein said cartridge includes a tray shaped element to support said blood, filtrate, and replacement fluid circuit portions.

13. A kit as in claim 12, wherein said replacement fluid circuit portion includes a plurality of connectors for connecting to multiple sources of replacement fluid simultaneously.

14. A kit as in claim 13, wherein said plurality includes a plurality of bag spikes.

15. A kit as in claim 13, wherein said replacement fluid circuit portion includes a branching structure with a plurality of branches each connected to a respective one of said plurality of connectors.

16. A kit as in claim 9, further comprising respective pumping portions in said filtrate, blood, and replacement fluid circuit portions that are configured to engage with respective pump actuators to move respective fluids therethrough.

17. A kit as in claim 16, further comprising a supporting cartridge tray configured to align said pumping portions in

respective positions to allow them to engage with pump actuators.

18. A disposable fluid circuit kit for use in extracorporeal blood treatment systems that supply replacement fluid to a patient, comprising:

a fluid circuit with a support;

said fluid circuit including arterial and venous blood lines connectable to a patient access at access ends thereof and connectable to a filter at filter ends thereof;

said fluid circuit including a replacement fluid line with an input end connectable to a replacement fluid supply and an output end connected to said venous blood line;

said replacement fluid line having an inline sterile filter between said input and output ends configured such that all fluid passing from said input end to said output end passes through a membrane effective to block pyrogens.

19. A kit as in claim 18, wherein said membrane as a pore size of approximately 0.2 micron.

20. A kit as in claim 18, wherein said input end of said replacement fluid line has a branching connector with multiple ends for connection to multiple fluid sources.

21. A kit as in claim 20, wherein said fluid circuit is supported in a cartridge that includes a tray shaped element to support said blood, filtrate, and replacement fluid circuit portions.

22. A kit as in claim 20, wherein said plurality includes a plurality of bag spikes.

23. A kit as in claim 18, wherein said fluid circuit is supported in a cartridge that includes a tray shaped element to support said blood, filtrate, and replacement fluid circuit portions.

24. A kit as in claim 18, further comprising respective pumping portions in said filtrate, blood, and replacement fluid lines that are configured to engage with respective pump actuators to move respective fluids therethrough.

25. A kit as in claim 24, further comprising a supporting cartridge tray configured to align said pumping portions in respective positions to allow them to engage with pump actuators.